



Albert J Boettler  
<Albert.J.Boettler@USA.dupont.com>

02/14/2007 07:24 AM

To Frank.Faranca@dep.state.nj.us,  
David.Doyle@dep.state.nj.us, Anne Pavelka  
<Anne.Pavelka@dep.state.nj.us>, Barry

cc

bcc

Subject Re: DuPont Status Meeting - Feb 20 at 10:00 am

History:

✉ This message has been replied to.

Frank, Anne, Dave, Barry and Andy:

Here is the agenda for Tuesday's meeting at 10:00 am (401 7TH FL CONF ROOM. We have a full meeting. However, if you have any additions or changes, let me know.

Thanks,  
Al

Participants  
Scott Norcross  
Andrew Cohen  
Nancy Grosso  
Tom Ei  
Al Boettler

Introduction and Agenda (5 min)

Update on Status of ongoing site wide remedial strategy.  
Documents pending agencies review  
DuPont 2007 priorities  
- Salem Canal  
- Delaware River GW - SW  
- Ground water optimization

SWMU 52 and Vault (10 min)

Current Activities (50 Min)

Del River GW-SW Investigation (w/ pictures)  
- Purpose  
- task  
Salem Canal (w/ pictures)  
- Purpose  
- tasks  
RFI  
- Purpose  
- task  
SWMU 8  
Surface Water Sampling  
- Purpose  
- tasks  
CMS  
- Purpose  
- tasks  
Eco Work Plan  
- Purpose

- tasks
- GW Recovery/Optimization
- Purpose
- tasks
- SAB and University Contracts
- Purpose
- tasks

Preliminary Assessment Report (45 Min)

Other Items (10 min)

Next Meeting/Close: (5 Min)

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Francais Deutsch Italiano Espanol Portugues Japanese Chinese Korean

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- 2/20/07 -

→ [ \* PFOA - Buildings 877 - investigate  
SI approved.  
New target # ~~0.04~~ ppb  
- off-site melts ] (Remediation standard)

→ Background??

→ Mtg w/ experts (John-NSD&P & DuPont Air folks).

- NSD&P will send a letter to DuPont - due 4/15/07  
then meeting w/ appropriate staff. [ WP

→ Licensed Daycare Center w/ 400'

⇒ Fact Sheets - Next Phase RFI report  
to be included

44046  
32  
44014

43824  
34  
43858

44014  
43858  
156  
PP

Anthony  
Cingale

10/10



10/10

10/10



Andy Park/R2/USEPA/US  
02/22/2007 10:33 AM

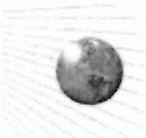
To Barry Tornick/R2/USEPA/US@EPA  
cc Adolph Everett/R2/USEPA/US@EPA  
bcc  
Subject Re: DuPont (Deepwater) Highlight

**DuPont Chambers Works/Deepwater, NJ:** We attended a meeting with DuPont and NJDEP on February 20, 2007 for update of the facility corrective action. Ongoing remedial activities at the facility were updated including Delaware River groundwater-surface water interface, ecological investigation (primarily targeting the northern half (Carneys Point) of the facility), Salem Canal, SWMU 8 (landfills formerly and currently used), Phase IV RCRA Facility Investigation, groundwater pump and treat optimization, and activities and roles of the Science Advisory Board and University Research. DuPont would provide EPA and NJDEP expectedly in March through August 2007 with a number of reports relating to the above remedial activities. In addition, the Remedial Action Report for SWMU 52 (located adjacent to the Delaware River) whose remediation has been completed would be submitted to EPA and NJDEP expectedly in March 2007. DuPont has almost completed the activities for SWMU 8, corresponding to the RCRA Corrective Measures Study (expected in April 2007). It was agreed that the report would be entitled as CMS/Remedial Action Selection Report (RASR). NJDEP informed that they would issue an NOD to EPA, if necessary upon completion of review of the report.

In response to the requirements of NJDEP's Technical Rule, DuPont has completed a preliminary assessment of additional areas including the manufacturing and production areas, beyond the SWMUs required to be investigated under the federal RCRA Corrective Action permit. The assessment report was provided to EPA and NJDEP in January 2007. It provided the results of the assessment for 16 targeted areas ("Focus Areas") and recommended further investigation of 11 Areas of Concern (AOCs), primarily targeting the production areas in the southern half (Chambers Works) of the facility. The report appeared to be well prepared. Upon approval, next phase of the investigation for these AOCs would be an RCRA Facility Investigation.

NJDEP informed that, with the new "remediation standard" of 0.04 ppb in groundwater for PFOA (Perfluorooctanoic Acid), they would send a letter to DuPont requesting submission of a work plan for on-site and off-site investigations. NJDEP initially considered that DuPont needed to submit a work plan by April 15, 2007 but later agreed to a 90-day response time. However, DuPont was not sure of the need of the work plan at this time based on the detected levels near the DuPont facility as well as the elevated levels of PFOA detected as background for New Jersey (Passaic River as well as near the DuPont facility) and believed that any further investigation at this time is not warranted. It was agreed that NJDEP and DuPont experts relating to the issue need to meet and discuss the need for further investigation.

Barry Tornick/R2/USEPA/US



Barry Tornick/R2/USEPA/US  
02/22/2007 08:05 AM

To Park.Andy@epamail.epa.gov@EPA  
cc  
Subject DuPont (Deepwater) Highlight

Please do a highlight this morning on the meeting.





Andy Park/R2/USEPA/US

02/22/2007 09:25 AM

To Andy Park/R2/USEPA/US@EPA

cc

bcc

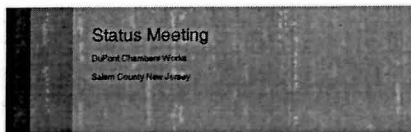
Subject DuPont, Deepwater - Summary of the 2/20/07 meeting with DuPont & NJDEP

- Document Title for SWMU 8 - DuPont is about to complete the CMS for SWMU 8. It was generally agreed that it is to be called/entitled as CMS/RASR. NJDEP said that they would provide NOD, if necessary, to EPA. NJDEP indicated that they may have to issue multiple NODs.
- SWMU 52 - RAR in March 2007.
- Ongoing activities:
  1. Delaware River GW-Surface Water investigation - Phase 1 and Phase 3 completed. Phase 2 (installing B well in intertidal zone) expected in March 2007.
  2. Chambers Works Ecological Investigation - Work plan submitted in February 2007.
  3. Salem Canal Seep - GW well installation scheduled for March 2007.
  4. SWMU 8 Surface Water Investigation - Report in March 2007
  5. SWMU 8 CMS - expected in April 2007.
  6. Phase IV RFI - supplemental report in August 2007. It was agreed that DuPont would provide fact sheets for all outstanding SWMUs/AOCs.
  7. GW pump & treat optimization - report in July 2007.
  8. Science Advisory Board & University Research
- PFOA - NJDEP newly promulgated 0.04 ppb as the GW remediation standard for PFOA. NJDEP would send a letter to DuPont requesting submission of a work plan for on-site (Building 877 and others...) and off-site investigations within 90 days. Due to elevated levels of PFOA detected in the background, any further investigation may not be warranted. It was agreed that NJDEP (John...) and DuPont Air experts may need to meet for further discussion concerning the need for further investigation.
- Concerning the Preliminary Assessment Report dated December 2006, 16 areas were reviewed including off-site areas. 11 AOCs were identified in the manufacturing areas primarily relating to dye production. RFI expected as follow-up.





SWMU 8 → CMR  
↳ RASR



February 20, 2007



## Agenda

Introduction & Agenda	5 min
Document Titles	10 min
SWMU 52 ISM and Vault Closure	10 min
Current Activities	50 min
<ul style="list-style-type: none"> <li>Delaware River groundwater to surface water investigation</li> <li>Chambers Works Ecological Investigation Workplan</li> <li>Salem Canal Seep</li> <li>SWMU 8 surface water investigation</li> <li>SWMU 8 Corrective Measures Study</li> <li>RFI</li> <li>GW pump &amp; treat optimization</li> <li>Science Advisory Board &amp; University research</li> </ul>	
Preliminary Assessment Report	45 min
Other Items/ adjourn	10 min
<b>Total</b>	<b>2 hours</b>

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## SWMU 52 Interim Stabilization Measure

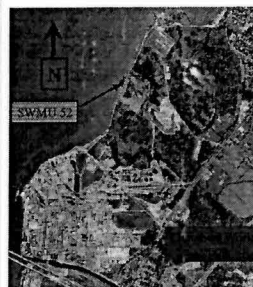
### Objectives

- Eliminate potential impact to Delaware River ecological receptors by removal of contaminated sediment, fused material, and debris from the intertidal and subtidal zones.
- Eliminate potential impact to groundwater and surface water by stabilization of uplands soil, and re-grading and covering, to minimize infiltration.
- Eliminate the potential for direct contact with site constituents through the placement of a 24-inch soil cover and construction of a fence to prevent access.

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## SWMU 52 Location



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## SWMU-52 - Low Tide



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## SWMU 52 REMEDIATION

Approx. 2.5 acres

Agglomerated material - 147 tons excavated and shipped offsite for disposal

Intertidal sediment dredging - 1,677 cu. yds. placed in A Basin Soil Vault

In-situ Stabilization - Approx. 6,000 cu. yds. upland soil >400 ppm Pb stabilized

Approx. 1,325 cu. yds. Stabilized material placed in Vault

Total of 105 cells (20'x20') stabilized

~17% (by weight) cement to soil ratio

Average cell depth of 4 ft.

Average tons cement per cell - 14

Average mix time per cell - 53 minutes

Approx. 18,000 man hours for construction phase

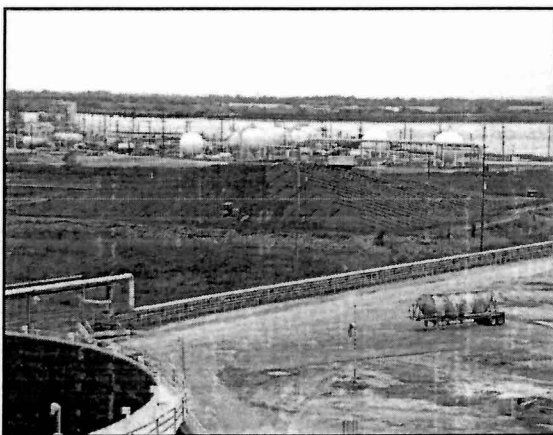
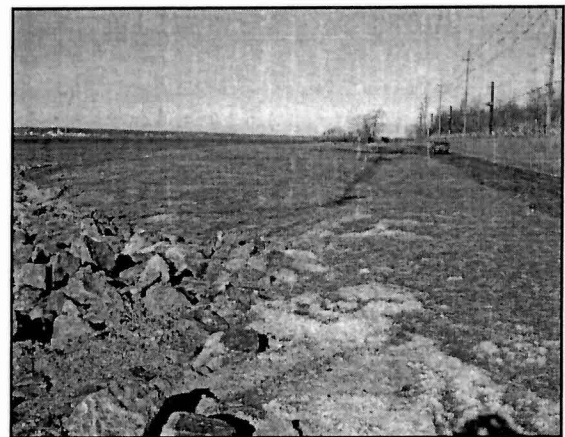
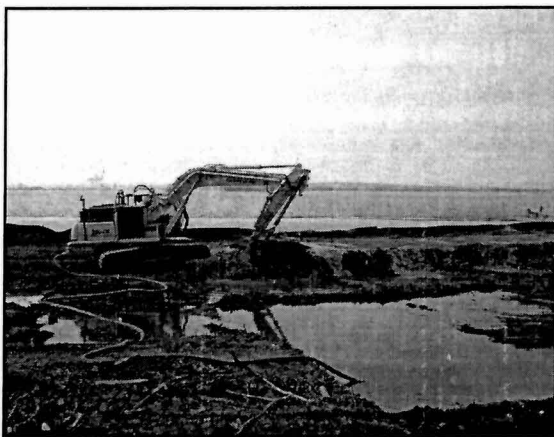
Construction costs ~ \$2,500,000

Remedial Action Report date - March 15, 2007

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### Current Activities

- Delaware River groundwater to surface water investigation
- Chambers Works ecological investigation
- Salem Canal Seep
- SWMU 8 surface water investigation
- SWMU 8 Corrective Measures Study
- RFI
- GW pump & treat optimization
- Science Advisory Board & university research

STANLEY DUPONT COMPANY





## Delaware River GW to SW Investigation

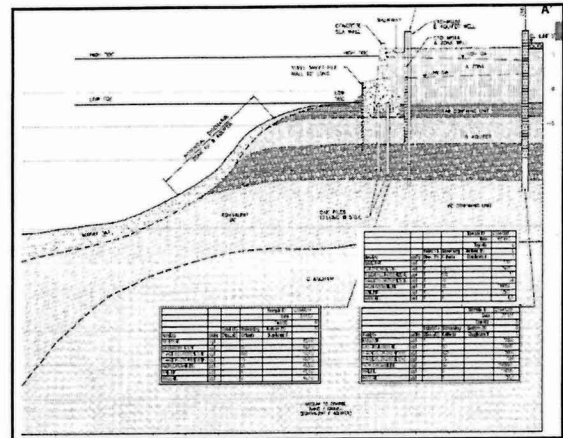
### Purpose:

Confirm that site-related constituents do not enter the Delaware River at concentrations that would be a potential concern for aquatic organisms (follow-up to tidal bank storage mixing model [Environ Mixing Zone Model]). As requested in NJDEP's Delaware River Initiative Letter (4/6/05).

### Three Tier Investigation

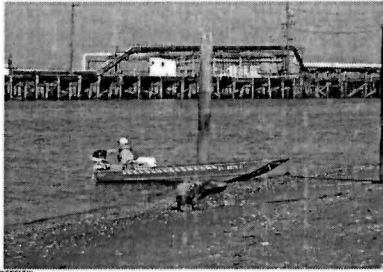
- **Phase 1:** Inspect physical integrity of seawall and condition of sealed outfalls; Locate/image B aquifer and BC clay subcrop in the DE R. using geophysical techniques and vibrocores.
- **Phase 2:** Install B aquifer wells in the intertidal zone to assess whether concentrations of COPCs are above the applicable standards
- **Phase 3:** Collect sediment samples to conduct biodegradation study. The study is designed to answer: Are the indigenous microbes capable of degrading site-related COCs?

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## Seawall Inspection

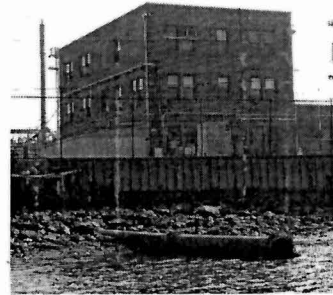
Conducted on 3 days 11/6, 11/10, and 12/16 in 2006.



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## Former Outfall 008



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## Looking South From Boat Ramp



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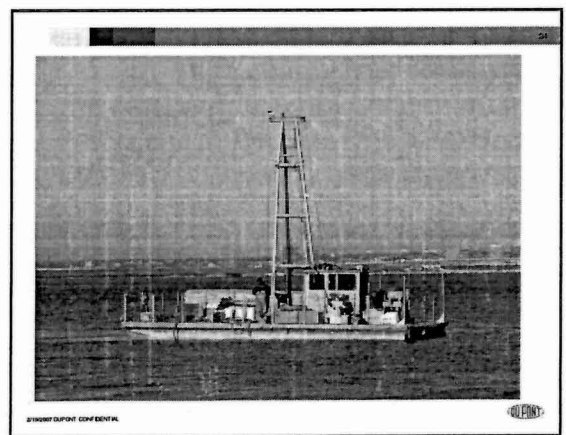
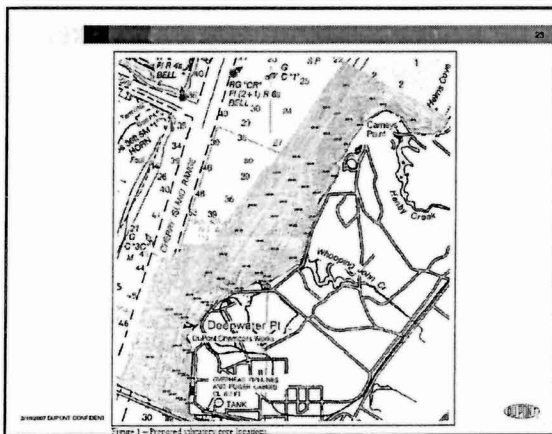
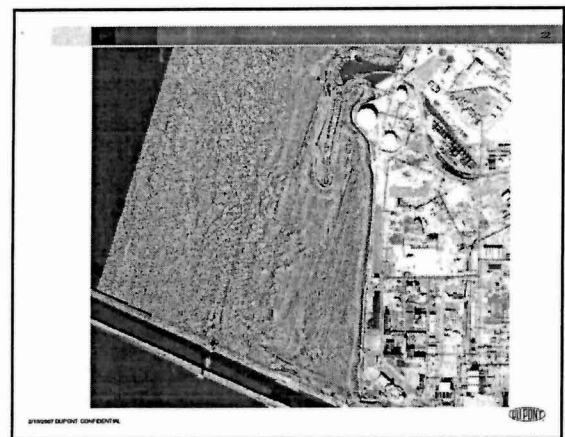
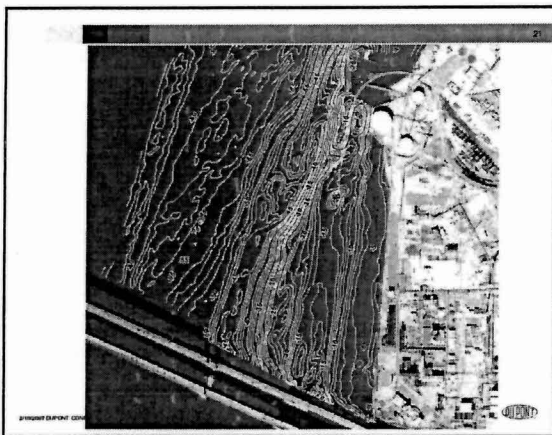
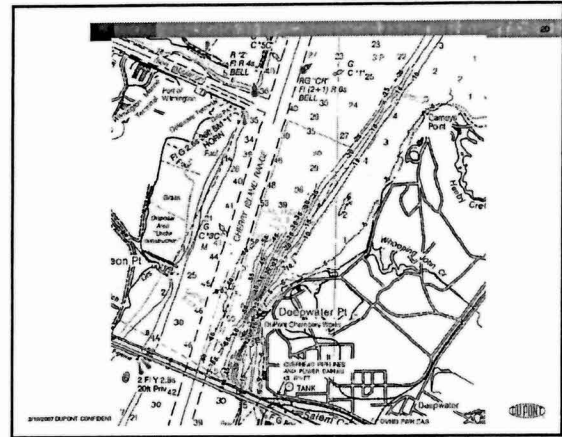
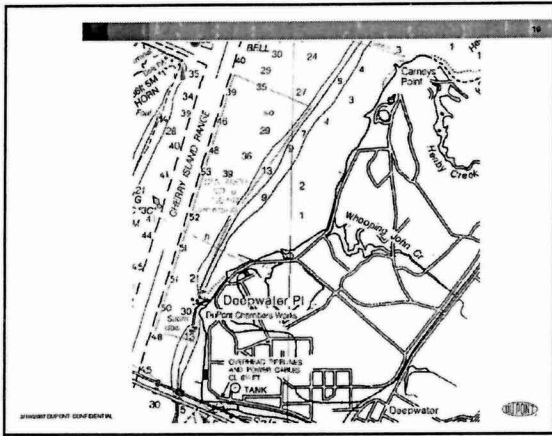
## Activities performed by Ocean Surveys Inc.

- **Hydrographic and Geophysical Surveys (9/29 – 10/11)**
  - Digital depth sounder
  - Subbottom profiler
  - Side scan sonar
  - Marine Magnetometer
- **Sediment Coring (11/4 – 11/11)**
  - 60 locations
  - Glasgow Labs microbial study

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*to review  
& to propose additional  
wells if needed.*

## Delaware River GW to SW Investigation Summary

- Field activities for Phase 1 and Phase 3 complete
- Evaluation of data ongoing
- Selection of Phase 2 well locations expected in March

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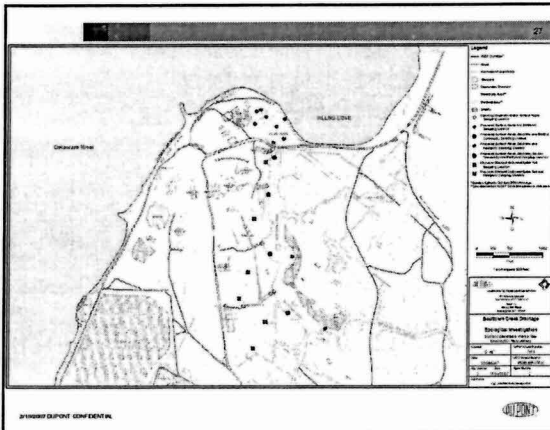
## Ecological Investigation Workplan

**Purpose:** To address recommendations in the revised BEE submitted 9/18/06.

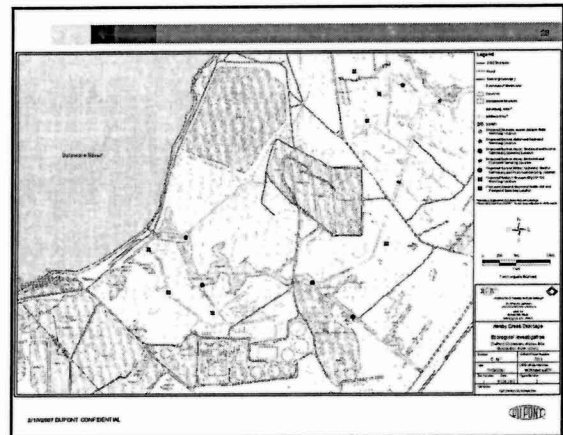
**Workplan submitted 2/13/07 with the following objectives:**

- Further characterize constituents of potential ecological concern (COPEC) migration pathways to environmentally sensitive areas (ESAs).
- Evaluate potential risk to sediment-dwelling invertebrate communities in Henby Creek and Bouttown Creek.
- Evaluate potential risk to fish, amphibian, and reptilian communities in Henby Creek and Bouttown Creek.
- Evaluate potential risk to wildlife in the Carneys Point area of the site.
- Conduct a waterfowl survey of B Basin and ponds in the southeast portion of the site.

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## Proposed Investigation Schedule

- March 2007: Waterfowl observation period for migratory birds
- May 2007: Waterfowl observation period for nesting birds  
Ecological habitat characterization (GIS)
- June 2007 Field sampling:
  - Sediment/surface water
  - Benthic invertebrate community
  - PushPoint sampling
  - Aquatic habitat characterization
- Report scheduled for December 2007 submission assuming agency approval of WP in March.

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## Salem Canal Investigation Status

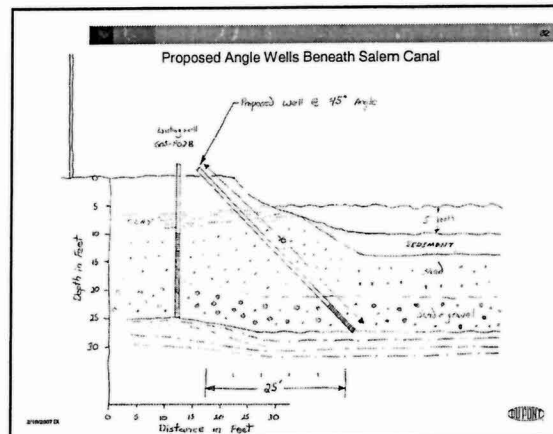
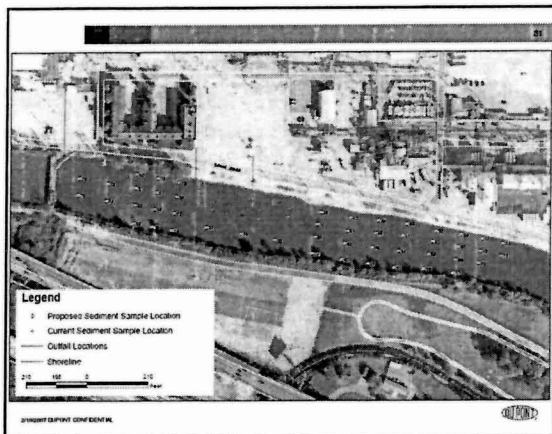
- Pre-design work plan submitted 11/15/2005 and approved 4/25/2006.
- Groundwater and geotechnical investigation
  - Completed in first half of 2006
  - 45 Day water level monitoring
  - 25 geotechnical borings
  - 3 new well installations
  - 17 groundwater samples
- Groundwater modeling ongoing
- Remedial Alternatives Analysis ongoing
- Sediment delineation completed January 2007
- Additional well installation in March 2007

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2/28/07 installation



### Salem Canal Investigation Summary

- Groundwater field activities scheduled for completion in March 2007
- Remedial Alternatives Analysis scheduled for completion in May 2007

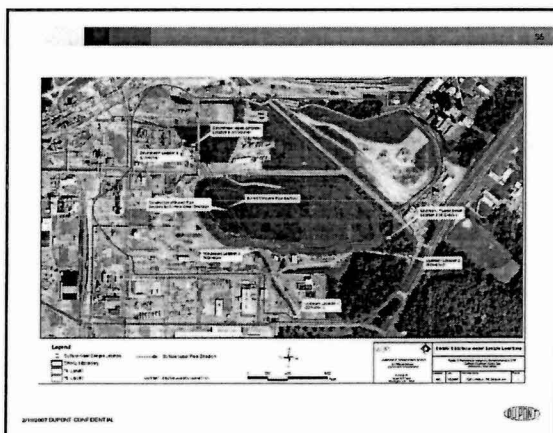
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### SWMU 8 Surface Water Investigation

**Purpose:** To determine whether SWMU 8 constituents were entering the site storm water drainage system (as recommended in SWMU 8 RI Addendum submitted May 2006).

- Workplan submitted 1/5/06 and approved 4/24/06
  - Six rounds of sampling completed
  - February, May, and August
  - Dry and wet event sampling
  - Volumetric flow estimates each round
- Report scheduled for submission 3/30/07

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### Photo of Location N09

N09-SW4 Located near fire pad, before A&B Landfill.

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## Outline of Preliminary Assessment Report (PAR)

- Executive Summary
- 1 Introduction
- 2 Background and History
- 3 Evaluation Approach and Method
- 4 Site Wide Evaluation
  - Summarizes Findings of detailed evaluations and presents proposed AOCs, Recommended Investigations, and Revised Site Conceptual Model
- 5-20 Focus Area Evaluations
  - 16 Focus Areas
  - Includes off site areas
- 20 Conclusions and Recommendations
- 21 References

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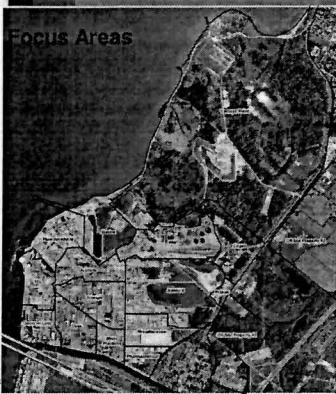
## Approach

- Developed GIS and Environmental Database (presented to agencies, August 2006)
- Subdivided Site into Focus Areas
- Defined indicator chemicals based on manufacturing/waste disposal information, existing analytical (illustrative purposes to manage size, all data evaluated/included)
- Developed CSM of potential migration pathways for data analysis
- Integrated process history, analytical data, and spatial data (air photo/site maps) into CSM to assess potential sources and receptors ("Pathway analysis")
- Identified potential source areas and migration pathways
- Based on above, revised conceptual model on site-wide scale

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## Focus Areas



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## Preliminary Assessment Highlights

- No immediate concerns for HH&E identified
- Some of the most active manufacturing areas were Dyes and Triangle areas
- Ditch System is primary suspected source of constituents to groundwater
- Historic outfalls into Delaware River and Salem Canal identified
- Historic drainage areas into and from basins identified
- SWMU locations not always accurate in EPA RFA
  - SWMU 8 and 55-2 (within SWMU 8)
- No indication of potential environmental concern in Off Site Areas
  - No physical evidence of use

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## Process Wastewater Ditches Example



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## Historical Drainage in Basins



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## Site-Wide Evaluation (Chapter 4)

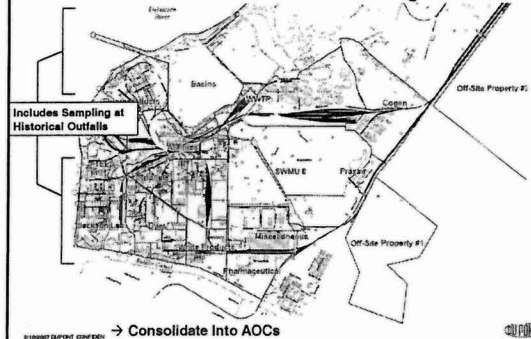
Site-wide perspective that integrates all focus area evaluations

### Elements:

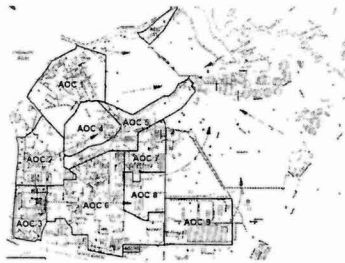
- Describe Chemical Constituents, sources and receptors prevalent on a site-wide scale
- Incorporate individual Focus Area findings and recommendations
- Defines Areas of Concern for Further investigation
- Presents Revised Conceptual Model
  - COCs
  - Media of Concern
  - Main Potential sources for each AOC
- Summarizes recommended investigations at each AOC

Eleven AOCs Identified

## Recommended Areas for Investigation

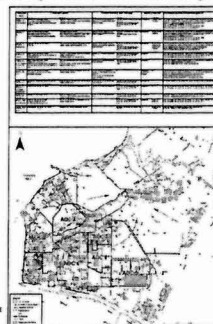


## 11 Areas of Concern



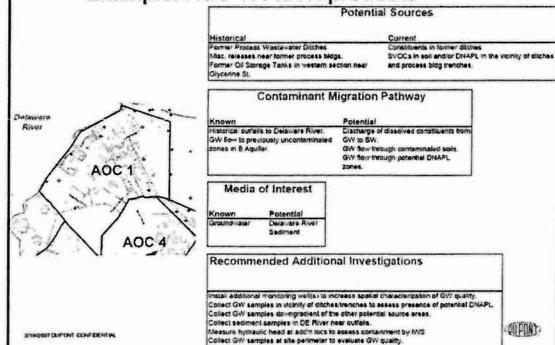
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## PA Results Depicted in Figure 4.4: Areas of Concern, Recommended Investigations, and Updated Site Conceptual Model



AOC	Potential Sources Historical & Current	Cont. Pathway Hist. & Current	Media of Interest Known & Potential	
			Known	Potential
AOC 1	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 2	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 3	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 4	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 5	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 6	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 7	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 8	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 9	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 10	Former Process Water Discharge	Groundwater	Groundwater	Groundwater
AOC 11	Former Process Water Discharge	Groundwater	Groundwater	Groundwater

## Example: AOC 1: Fluoroproducts





## General Recommendations

Groundwater sampling to characterize or delineate potential source areas or NAPL areas

Limited soil sampling in certain areas (basins, SWMU 56 area)

Sediment sampling recommended at outfalls

No change in status at identified SWMUs

- No Further Actions
- No Further Investigations
- Continue ongoing investigations/Actions

No further action based on Preliminary Assessment for

- Off Site Areas
- Pharma
- CoGen (exception of Henry Creek Eco Risk Assessment)
- Prazair
- 40 Acre area of Carney's Point

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